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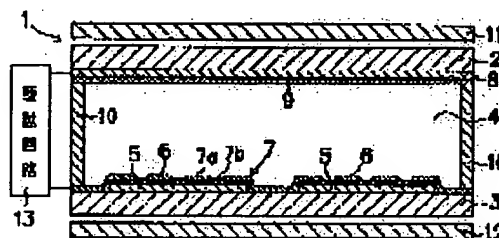
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(54) LIQUID CRYSTAL DISPLAY ELEMENT AND MANUFACTURE THEREOF

(57)Abstract:

PURPOSE: To dispense with visual angle dependence so as to provide a wide angle of visibility by arranging areas having different phase separation structures each other in an oriented film made of non-compatible polymer alloy and varying orientation of liquid crystal in every area.

CONSTITUTION: On an opposed face, on which a transparent electrode film 5 and an oriented film controlling thin film 6 are formed, of a glass substrate 2, a polymer alloy oriented film 7 is formed and covers the whole surface. The oriented film 7 is formed in such ways as mixing two kinds of polyimide RN 713 and RN 739 which are non-compatible with each other in n-methylpyrrolidone so as to turn them into polymer alloy, applying the polymer alloy by a spin coating method, and burning it after evaporating a solvent. The oriented film 7 formed in this way has a phase separation structure on the basis of relation between surface free energy of the two kinds of polyimides constituting the polymer alloy and surface energy of its substrate phase. As a result, intensive visual angle dependence, which is observed when liquid crystal is oriented in one direction, is dispensed with, so that a wide angle of visibility can be obtained.



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